

AMENDMENTS TO THE CLAIMS (AS ON AMENDED SHEETS ANNEXED TO IPER)

This listing of claims will replace all prior versions, and listings, of claims in the application:

1. (original) Process for the preparation of a shaped part of an ultrahigh molecular weight polyethylene (UHMWPE) by heating the UHMWPE to a temperature above the melting temperature, shaping the resulting melt, and cooling the melt to a temperature below the melting temperature, wherein
 - a) the UHMWPE has a weight average molecular weight (M_w) of at least 1×10^6 g/mol,
 - b) during the shaping the storage plateau modulus (G^*) of the UHMWPE is kept at a value of at most 1.5 MPa,
 - c) whereafter, before the cooling, the G^* is raised to its final value.
2. (original) Process according to claim 1, wherein Θ is at most 1 K/minute, as of a temperature of 350K.
3. (original) Process according to claim 2, wherein the heating rate Θ is at most 5 K/minute.
4. (original) Process according to claim 2, wherein the MWD is between and inclusive 1.2 -3.0.
5. (currently amended) Process according to ~~anyone of claims 1-3~~ claim 1, wherein the initial value of G^* is at most 0.75 MPa.
6. (currently amended) Process according to anyone of claims 1-5, wherein G^* builds up to a value of 1.5 MPa at a speed (Ψ) less than 3 MPa/hour.
7. (original) Process according to claim 6, wherein Ψ is less than 0.5 MPa/hour.
8. (currently amended) Process according to ~~anyone of claims 1-7~~ claim 1, wherein the UHMWPE is obtained through a solution or suspension polymerization at a

temperature of between 225 and 325 K, using an unsupported catalyst in a concentration of less than $1 \cdot 10^{-4}$ mol/L.

9. (currently amended) Process according to ~~anyone of claims 1-8~~ claim 1, wherein the UHMWPE is either a homopolymer of ethylene, or a copolymer of ethylene with another α -olefin or cyclic olefin.

10. (original) Process according to claim 8, wherein the polymerisation takes place at a temperature between and inclusive 260 and 305 K.

11. (currently amended) Process according to ~~anyone of claims 1-10~~ claim 1, wherein the UHMWPE is annealed during the heating, at a temperature of not less than 398 K and not more than 410 K.

12. (currently amended) Essentially grain boundary free shaped part, obtainable with a process according to ~~anyone of claims 1-11~~ claim 1.

13. (currently amended) A medical device which comprises ~~Use of a shaped part according to claim 12 or prepared according to anyone of claims 1-11, in a medical application.~~

14. (original) The medical device ~~Use~~ according to claim 13, wherein the shaped part is an element of a hip or knee prosthesis.